WHAT IS CLAIMED IS:

1. A method for transporting elemental sulfur comprising:

(a) combining said elemental sulfur with a non-aqueous liquid carrier comprising a member selected from the group consisting of anhydrous ammonia and sulfur dioxide to form a fluid mixture, and

(b) conveying said fluid mixture by way of a transport vessel.

2. The method of claim 1 in which (b) is performed in the absence of any temperature control of said transport vessel other than by exposure to environmental conditions.

3. The method of claim 1 in which said fluid mixture is a slurry of solid elemental sulfur in a liquid solution of sulfur dissolved in said non-aqueous liquid carrier.

4. The method of claim 1 in which said transport vessel is a pipeline, and (b) comprises pumping said fluid mixture through said pipeline.

5. The method of claim 4 in which said pipeline has an inner surface of ferrous metal in contact with said fluid mixture.

6. The method of claim 4 in which said pipeline is surrounded by air.

7. The method of claim 4 in which said pipeline is an underground pipeline.

8. The method of claim 4 in which said pipeline is an underwater pipeline.

9. The method of claim 1 in which said non-aqueous liquid carrier is anhydrous ammonia.

10. The method of claim 9 in which said elemental sulfur constitutes at most about 65% by weight of said fluid mixture.

11. The method of claim 9 in which said elemental sulfur constitutes from about 20% to about 65% by weight of said fluid mixture.

12. The method of claim 9 in which said elemental sulfur constitutes from about 40% to about 60% by weight of said fluid mixture.

13. The method of claim **9** in which said elemental sulfur constitutes from about 50% to about 60% by weight of said fluid mixture.

14. The method of claim **9** in which (b) is performed at a temperature less than or equal to 35°C.

15. The method of claim **9** in which (b) is performed at a temperature less than or equal to 20°C.

16. The method of claim **1** in which said non-aqueous liquid carrier is sulfur dioxide.

17. The method of claim **16** in which said elemental sulfur constitutes at most about 65% by weight of said fluid mixture.

18. The method of claim **16** in which said elemental sulfur constitutes from about 1,800 ppm by weight to about 65% by weight of said fluid mixture.

19. The method of claim **16** in which said elemental sulfur constitutes from about 1% by weight to about 60% by weight of said fluid mixture.

20. The method of claim **16** in which said elemental sulfur constitutes from about 10% by weight to about 50% by weight of said fluid mixture.

21. The method of claim **16** in which (b) is performed at a temperature less than or equal to 40°C.

22. The method of claim **16** in which (b) is performed at a temperature less than or equal to about 20°C.

23. A method for extracting elemental sulfur from a sulfur-containing, substantially water-free geologic formation, said method comprising:

(a) purging said geologic formation with anhydrous ammonia to form a liquid solution of elemental sulfur from said geologic formation dissolved in anhydrous ammonia, and

(b) recovering elemental sulfur from said liquid solution.

24. The method of claim **23** further comprising recycling to (a) at least a portion of said ammonia remaining after recovery of elemental sulfur from said liquid solution in (b).

25. The method of claim **23** in which said geologic formation is a geologic mineral formation.

26. A method for extracting elemental sulfur from a sulfur-containing, substantially water-free mineral formation, said method comprising:

(a) purging said mineral formation with anhydrous ammonia to form a liquid solution of elemental sulfur from said mineral formation dissolved in anhydrous ammonia, and

(b) recovering elemental sulfur from said liquid solution.

27. The method of claim **26** further comprising recycling to (a) at least a portion of said ammonia remaining after recovery of elemental sulfur from said liquid solution in (b).

28. A method for extracting elemental sulfur from substantially anhydrous carbonaceous solids, said method comprising:

(a) purging said solids with anhydrous ammonia to form a liquid solution of elemental sulfur from said solids dissolved in anhydrous ammonia, and

(b) recovering elemental sulfur from said liquid solution.

29. The method of claim **28** further comprising recycling to (a) at least a portion of the ammonia remaining after recovery of elemental sulfur from said liquid solution in (b).

30. A method for storing elemental sulfur comprising combining said elemental sulfur with anhydrous ammonia to form a liquid solution or suspension, and depositing said solution or suspension in a substantially water-free subterranean formation.

31. The method of claim **30** further comprising withdrawing anhydrous ammonia from said formation apart from said sulfur, for re-use.

32. A composition of matter consisting essentially of a solution or suspension formed by combining elemental sulfur with liquid sulfur dioxide.